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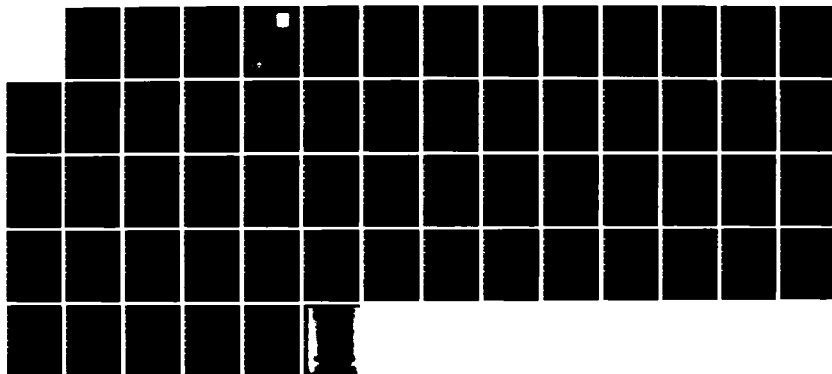
RAPID DESIGN AND CONSTRUCTION DURING MOBILIZATION(U)  
ARMY WAR COLL CARLISLE BARRACKS PA D M WILSON  
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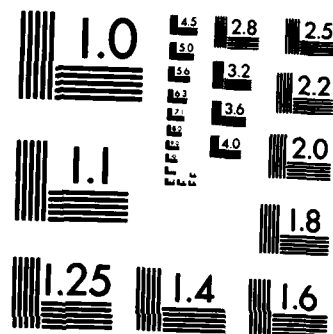
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The fundamental issue is to determine the most appropriate approach to contracting to achieve rapid design and construction during mobilization. Contracting readiness was examined as being a concept which would minimize probable constraints impeding the contracting process. A qualitative approach was used to investigate the problem. Information and data were gathered primarily using a literature search, supplemented to a limited extent with personal discussions. Current peacetime contracting procedures are not geared to functioning rapidly

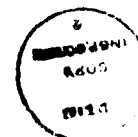
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and efficiently in the face of mobilization uncertainties. During past mobilizations there was a heavy reliance on cost-reimbursement contracting to offset short response times and the absence of plans. Contracting procedures and the types of contracts to be used are only part of the answer to rapid contracting. Contracting readiness involves detailed advance planning in terms of customer requirements, facilities designs, installation plans, and specific construction projects configured to contract packages. The culmination of detailed planning and the manifestation of contracting readiness is in the recommendation that ready to award contracts be developed and maintained on the shelf. Concurrently the Corps of Engineers must be ready to adjust organizations to utilize cost-reimbursement contracts.



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# STUDY PROJECT

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## RAPID DESIGN AND CONSTRUCTION DURING MOBILIZATION

BY

COLONEL DANIEL M. WILSON

18 APRIL 1984



US ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013

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**USAWC MILITARY STUDIES PROGRAM PAPER**

**RAPID DESIGN AND CONSTRUCTION DURING MOBILIZATION**

**AN INDIVIDUAL STUDY PROJECT**

**by**

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18 April 1984**

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## ABSTRACT

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The fundamental issue is to determine the most appropriate approach to contracting to achieve rapid design and construction during mobilization. Contracting readiness was examined as being a concept which would minimize probable constraints impeding the contracting process. A qualitative approach was used to investigate the problem. Information and data were gathered primarily using a literature search, supplemented to a limited extent with personal discussions. Current peacetime contracting procedures are not geared to functioning rapidly and efficiently in the face of mobilization uncertainties. During past mobilizations there was a heavy reliance on cost-reimbursement contracting to offset short response times and the absence of plans. Contracting procedures and the types of contracts to be used are only part of the answer to rapid contracting. Contracting readiness involves detailed advance planning in terms of customer requirements, facilities designs, installation plans, and specific construction projects configured to contract packages. The culmination of detailed planning and the manifestation of contracting readiness is in the recommendation that ready to award contracts be developed and maintained on the shelf. Concurrently, the Corps of Engineers must be ready to adjust organizations to utilize cost-reimbursement contracts.

## PREFACE

This Individual Study Project was prompted by a related question sponsored by the US Army Corps of Engineers and submitted to the US Army War College as a potential study topic. The author's interest and prior involvement in the area of mobilization, combined with experience in the contracting field served as motivation to conduct the study. The focus of the study on contracting readiness represents the key nature of contracting to rapid design and construction during mobilization. The study revealed that there needs to be more emphasis on developing interactions between mobilization construction planning and the contracting process. A complementary study on contractor involvement needs to be conducted to round out the approach to contracting readiness. Gratitude is extended to the many individuals in Headquarters, US Army Corps of Engineers and the Huntsville Division who provided information in support of the study.



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## CHAPTER I

### INTRODUCTION

In the event of a major war, mobilization will severely strain both military and civilian capabilities with increased demands on resources. The level of mobilization will dictate the extent to which existing capabilities must be expanded to accommodate these demands. In the case of construction, the demand becomes significant to support either FULL or TOTAL mobilization.<sup>1</sup> Inherent in such mobilizations will be extremely short time frames in which to construct needed facilities. The Chief of Engineers in a 1982 White Paper made the following points:

"The challenge to mobilize and sustain the force creates an enormous need to plan for additional facilities."<sup>2</sup>

By being prepared to award contracts immediately upon Alert, or other authorization, actual construction of facilities can get underway with the least possible delay; thereby, enhancing the chances for a successful mobilization. Being prepared to award contracts also implies that plans, designs and specifications will have been completed in advance, which will contribute to the efficiency of contractors and further reduce delays.

### BACKGROUND

During World War I and World War II, the US Army designed and constructed billions of dollars worth of facilities in very short periods of time. The mobilizations for both world wars were TOTAL

mobilizations in that they involved both the existing force structure and creation of additional forces. Similarly, industry had to be greatly expanded to accommodate the near insatiable demands for equipment, munitions and supplies. Common to these expansions was the need to construct additional facilities to house, train, and sustain the forces.

The design and construction requirements for World War I presented a new challenge in that there was no precedent on which to base the rapid buildup operations. The first big mobilization found the construction program beginning from a standing start after other mobilization processes had already begun. There were no installation plans available -- in many cases sites had not even been selected. For all practical purposes it can be said that there was no organizational infrastructure available which was even remotely prepared to take on the mammoth construction program.<sup>3</sup> Additionally, there were no facilities designs or specifications prepared to serve as a starting point. As the requirements became defined, pressure mounted to commence construction at an unprecedented rate. The question of how to contract for the rapid design and construction of mobilization facilities loomed large. Only through innovation and extraordinary measures was it possible to get the program underway in time to support the mobilization.

Given the experience gained in mobilizing for the First World War, World War II should have been a much smoother operation. To an extent, the design and construction for WW II did draw on the experiences from WW I. However, the starting point for the WW II

mobilization was not much better than that for WW I -- plans were nearly non-existent, and most of the shortcomings experienced before were present. Even the contracting process had to start from a neglected position of no preparations. In spite of the repeated lack of readiness, requirements were somehow met.

In both cases of TOTAL mobilization, sufficient time was available to allow some exceptionally dedicated people to overcome neglected planning for such contingencies. Even though it turned out that time was available to the designers and builders, time was also the ever present constraint. It was abundantly clear that forces could not be mobilized, equipped, deployed and supplied without a successful construction program. In the past and in the future contracting represents the "key activity" in the design and construction process that allows plans to be transformed into usable facilities. Contracting received a significant amount of public and political attention during and after prior mobilizations: "Of all the criticism directed at Army construction, the harshest and most persistent had to do with contracts."<sup>4</sup> Obviously, the contracting methods used in the past got the job done but were not considered to be totally appropriate.

### PROBLEM

The problem addressed by this study is: To determine the most appropriate approach to contracting for rapid design and construction during mobilization.

Current contracting procedures do not seem to lend themselves to accommodating extensive design and construction requirements in the highly constrained time frame expected for a future mobilization. Accordingly, time consuming contracting procedures could seriously constrain the design and construction required to support mobilization. As a consequence, the war fighting capability of the forces could be degraded.

In looking into the contracting procedures it is immediately evident, both from experiences of past mobilizations and expectations for the future, that the rapidity of contracting is not wholly dependent upon specific contracting procedures. There are other factors which impact the speed with which contracting can be accomplished. Thus, resolution of the problem of how to speed up contracting during mobilization, involves more than contracting procedures per se'.

#### INVESTIGATIVE PROCEDURES

A qualitative approach is used to investigate the problem of determining the most appropriate method for rapid design and construction during mobilization. Investigative efforts were primarily focused on literature research. Discussions were held with some individuals who have knowledge of the subject; however, these discussions were of limited value. Even though past contracting procedures generated a high degree of criticism, little has been done to correct the problem. There is a dearth of information, in current mobilization literature, on the subject of contracting for design and

construction during mobilization.

### Historical Perspective

The historical perspective of contracting for design and construction during mobilization was developed as a result of examining the procedures used during World Wars I and II. The mobilization to support the Korean War was not of the magnitude of the earlier mobilizations nor was it considered to be representative of what could be expected in the future. The mobilization for the Vietnam War was nearly nil, so it provided no useful experience to be applied to the future.

In addition to considering the specific contracting methods used in the past, attention was paid to ascertaining those associated factors that enhanced or impeded the process. For example, delays in site selection for the camps to be constructed significantly impeded initial construction. Not only were there delays in selecting the sites, there was a general absence of any kind of engineering surveys to identify construction conditions.

### Current Procedures and Methods

The current contracting procedures and methods were examined with a view of determining whether they would serve to allow for the rapid design and construction needed during mobilization. In this vein, an attempt was made to determine what planning has taken place or is underway to support mobilization requirements.

### Analysis and Proposal

The analysis consisted mainly of comparing historical and current contracting methodologies in view of future mobilization requirements for rapid design and construction. With the comparison in hand, the next step was to determine whether there are shortcomings and how best to overcome them. Finally, an approach to contracting for design and construction during mobilization was developed as a proposed way to accomplish the task and avoid pitfalls of the past.

### ORGANIZATION OF THE PAPER

The first major category covered in the paper is an examination of the significance of design and construction in the mobilization scheme. Likewise, consideration is given to the role of the US Army Corps of Engineers in the design and construction process. The historical perspective is established by reflecting the significant factors from previous mobilizations.

Contracting readiness is the microcosm of the many factors which come into play in the design and construction process. This area is addressed from the empirical point of view, current thinking as reflected in various policies and regulations, and a look at what is being done to prepare for the mobilization contingency.

Contracting considerations are examined as to what is currently available to assist in the pursuit of rapid design and construction during mobilization. This is not an exhaustive treatment of contracting policies, but is more of an identification of the salient

considerations one should keep in mind when working with mobilization contracting.

In the final section of the paper, conclusions derived from the preceding examination are briefly summarized. Based on the conclusions, recommendations are offered which set forth a proposed approach to contracting to enhance rapid design and construction during mobilization.



## CHAPTER II

### DESIGN & CONSTRUCTION FOR MOBILIZATION

The installations and facilities required to support mobilization will be based on the prescribed level of mobilization. In considering design and construction, only the levels of FULL and TOTAL mobilization are significant since anything less than FULL mobilization will be of little consequence. Under a FULL mobilization, requirements will be those needed to support active and reserve component units in the existing force structure, individual reservists, and the sustaining materiel base. TOTAL mobilization involves expanding the Armed Forces beyond the existing approved troop basis to an unspecified level, and increasing national resources to activate and sustain the forces.<sup>5</sup> Design and construction requirements for FULL mobilization can be determined with a fair degree of accuracy because the force structure and stationing plans are known, even though they are subject to minor changes from time to time. FULL mobilization is the prelude to TOTAL mobilization and establishes the starting point for determining design and construction requirements for mobilization.<sup>6</sup>

### ACTIVITIES ON THE CRITICAL PATH

Mobilization is a microcosm of many very important activities which to varying degrees will influence success in accomplishing the wartime mission. Certain of these activities surface as being of

special significance.

"... in each war this century the Nation's ability to quickly marshal and focus its construction capabilities was the pacing issue in obtaining both manpower and production expansions."<sup>7</sup>

The more extensive a mobilization, the more construction of facilities will determine whether forces can be generated on the battlefield in time to gain victory. DESIGN and CONSTRUCTION are obviously "Critical Path Activities" in a mobilization network. Likewise, CONTRACTING for Design and Construction is critical to achieving any progress -- it is in fact a "key activity" in the construction process.

A frequently heard comment is that any future war of the magnitude contemplated to require FULL or TOTAL mobilization will be over before the mobilization can take place. This short-war concept is unrealistic and should not be allowed to obfuscate the need to be prepared for the eventualities of a protracted conflict.<sup>8</sup> While the short-war concept is unrealistic, a short-notice concept should be considered almost a certainty. No one knows how much time will be available to mobilize, which means that everything feasible and practical must be accomplished in peacetime so as not to delay the war effort.

Considering the above "Critical Path Activities" in preparing for mobilization; DESIGN can be accomplished in its entirety during peacetime; CONTRACTING can be pursued to a near state of award; and some CONSTRUCTION might be partially accomplished during peacetime. Since the focus of this study is on CONTRACTING, efforts have not been made to identify construction which could be accomplished during

peacetime. If design is accomplished during peacetime and contracting is taken to a point where awards can be made almost immediately upon alert, or other authorization, it follows that construction time can be minimized; that is, all reasonable efforts will have been made to allow for rapid construction.

### ROLE OF THE CORPS OF ENGINEERS

The US Army Corps of Engineers is responsible for military Design and Construction during peacetime and wartime, including mobilization. The role of the Corps of Engineers in past mobilizations has varied. During World War I the Quartermaster Corps was the military construction agency for the Army. Also, during the rearmament phase of World War II most military construction was handled by the Quartermaster Corps. During this period, the Corps of Engineers had all Air Corps construction (approximately \$200-million in value) and all construction in Alaska.<sup>9</sup> However, on 1 December 1941, just prior to the Japanese attack on Pearl Harbor the President signed the "Madigan Bill" transferring responsibility for all military construction to the Corps of Engineers. The controversy over which organization should have responsibility for military construction had gone on for many years, even before World War I.<sup>10</sup> The Corps of Engineers won the struggle, but also got facilities maintenance responsibility, something that was not particularly desired at the time.

Prior to December 1941, the Quartermaster Corps had to cope with the impact of initiating mobilization construction with little or no

prior planning. When the Corps of Engineers assumed responsibility for all military construction, some advanced planning for further expansion of the Army had taken place by the Quartermaster Corps; thus, the Corps of Engineers was in a position to move into action more rapidly than had been the case earlier. The highly decentralized organization of the Corps of Engineers was an advantage which had not been available to the Quartermaster Corps. Following the declaration of war, the Corps of Engineers was unexpectedly confronted with an astronomical construction program:

"The undertaking was truly gigantic, dwarfing those previous great endeavors, the building of the Panama Canal and the emergency construction programs of 1917-18 and 1940-41. In urgency, complexity, and difficulty, as in size, it surpassed anything of the sort the world had ever seen. The speed demanded, the sums of money involved, the number and variety of projects, the requirements for materials and equipment, and the problems of management and organization were unparalleled. So formidable was the enterprise that some questioned whether it was possible."<sup>11</sup>

Decentralization had long been the strength of the Corps of Engineers and nothing changed in that regard when the massive mobilization requirements appeared.

Initially Division Engineers were empowered to execute contracts in the amount of \$5-million and District Engineers up to \$2-million. This was a significant change from the way the Quartermaster Corps had done business under a highly centralized structure where all design and construction contracts were awarded in Washington, D.C..<sup>12</sup> On 17 December 1941, Division Engineers were granted authority to approve negotiated contracts in the amount of \$5-million, and District and Area Engineers were granted similar authority up to \$3-million.<sup>13</sup> The Corps of Engineers still bases its planning for execution of the

mobilization construction mission on decentralization with ample authority delegated to field commanders.<sup>14</sup>

In terms of organizational structure the Corps of Engineers is extremely well suited to carry out a highly decentralized mobilization construction program. The question seems to be whether adequate planning has taken place to allow execution in a timely manner. Based on the dates of relevant studies and the Corps' mobilization planning document, it seems that it has only been within the past five years that planning for the mobilization mission has been seriously pursued. It is not evident that adequate detailed planning and preparations have yet taken place at the district and installation levels. One controlling factor in permitting completion of preparations in the field is the completion of designs for standard mobilization facilities. Moreover, contracting readiness (discussed in Chapter III) cannot be achieved until all other planning has been completed.

All military construction as well as some industrial construction required to support the Army will be accomplished by the Corps of Engineers.

"Similar to troop bases, production base installations will be called on to immediately increase capacity and output in mobilization. ... Enhancement of the production base will largely be the responsibility of the Corps working in concert with DARCOM, which has primary production base responsibility."<sup>15</sup>

Mobilization construction to support the other services is anticipated; however, no requirements have been identified.

"The US Air Force (USAF) and US Navy indicate that they do not foresee any additional Corps support for their installations or facilities during mobilization."<sup>16</sup>

It is possible that the Corps of Engineers would be called on to provide support for other government agencies during a TOTAL mobilization. Whether such additional requirements would come about is conjecture; yet, such a possibility only amplifies the necessity for thoroughly planning and preparing for those requirements which are known or can be determined. Readiness in this regard implies being ready to immediately award contracts for required design and construction.

### AN HISTORICAL PERSPECTIVE

The following is a brief summarization of some of the significant aspects of past mobilizations, which should be considered in planning for future ones. Much of what we do in mobilization planning is developed from the perspective of what occurred during World War I and World War II.

#### Magnitude of Mobilizations

Construction for mobilization during World War I was phenomenal for its time. In less than six months after the decision was made to mobilize the military, shelter had been constructed for nearly 1,500,000 men. The construction had taken place at 32 locations, involved 16 cantonments for the National Army and 16 temporary camps for the National Guard. Total cost of the initial construction effort amounted to approximately \$180-million.<sup>17</sup> Following initial construction of the 32 camps/cantonments there were all kinds of requests for additional construction. There were, for example, 294 hospitals with an estimated construction cost of \$128-million.<sup>18</sup>

The World War II construction effort actually took place in two stages, rearmament and mobilization. Rearmament began in 1938, but the rearmament construction program (also called peacetime mobilization) started in July 1940 and carried on to the time war was declared in December 1941. During that time construction in place was valued at approximately \$2.8-billion. The placement for the month of November 1941 had reached a record high of about \$240-million. The Corps of Engineers assumed responsibility for the military construction program in December 1941. During 1942, the value of in-place construction was estimated at nearly \$5-billion, with an all time placement high during July of \$720-million, more than all military projects from 1920 - 1938.<sup>19</sup> Adjusted to 1980 dollars, the July 1942 peak was \$5 billion.<sup>20</sup> In 1943 another \$2-billion in placement was recorded.<sup>21</sup> The facilitization program resulted in housing for an Army of 4-million, air fields, transportation facilities and a wide range of industrial facilities including ammunition, chemical and aircraft plants -- all of these basic facilities demanded a host of ancillary and supporting facilities.

There is no firm estimate as to the projected costs of military construction for full mobilization. One estimate puts expected costs at about \$3.5-billion,<sup>22</sup> which would not be anywhere near the magnitude of World War II. Another estimate places total military and industrial construction costs between \$10-billion and \$15-billion.<sup>23</sup> In any case it does not appear that mobilization construction is expected to severely tax the construction capability of the United States. Moreover, military construction requirements

should not stress the Corps' capabilities.<sup>24</sup> The magnitude of construction measured in dollars is only one way to look at the past and future efforts -- the rate of placement, e.g. dollars of placement per month (\$/mo) would be more representative of what to expect. It is expected that the bulk of emergency construction would be completed during the first six months of mobilization. Accordingly, placement rates might be as high as \$2.66 billion per month, which would be well within National capabilities.<sup>25</sup>

### Planning Considerations

In his look at industrial mobilization, Roderick Vawter states that:

"There was a complete absence of plans prior to our entry into World War I, with a glaring shortcoming being the lack of defined requirements about what was needed and when."<sup>26</sup>

The situation concerning construction requirements and plans to support a mobilization were completely analogous to Vawter's comment. The fact that sites had to be selected for installations after mobilization commenced exemplifies the severe deficiency of mobilization planning.<sup>27</sup> Colonel Isaac W. Littell, Chief, Construction and Repair Division, Office of the Quartermaster General had to immediately face the reality of inadequate planning:

"Except for blueprints of barracks and mess halls prepared for use on the Mexican border by the Punitive Expedition of 1916, Littell had no plans for temporary structures. Nor did he have any plans for organizing and directing a huge high speed construction effort."<sup>28</sup>

To compensate for the planning void, the Secretary of War, Newton D. Baker formed a committee of the best from industry to work under Colonel Littell to handle the design and construction mission -- engineering, contracting and procurement of materials.<sup>29</sup>



World War II did not fall upon the United States in an abrupt manner as many would believe. The actual events that led to finally entering the war were certainly a surprise, but rearmament construction efforts were underway at least one and a half years before Pearl Harbor. Even with benefit of lessons learned from the sorry conditions which existed at the beginning of World War I, planning for mobilization was not much better in 1940.

"For twenty years top military planners had assumed that a huge emergency construction effort would not again be necessary. But the crisis of 1940 compelled the Army to undertake an even larger building program than had U.S. entry into World War I. ... Even at this late date (May 1940), few in the General Staff recognized the need for an all-out construction effort. The hope persisted that large numbers of men might be housed in tents and existing buildings, that the experience of World War I need not be repeated."<sup>30</sup>

As was the case in at the beginning of World War I, to assist in developing the organization and infrastructure for a large construction program, men were brought in from industry.<sup>31</sup>

Some attention had been paid to mobilization during the intervening years between the wars; yet, what little planning that had taken place was woefully inadequate. A Senate Committee headed by Senator Harry S. Truman investigated the construction contracting which had taken place during the early period of preparations for World War II -- the rearmament construction period of May 1940 - December 1941. Among other condemnations, Senator Truman cited excessive costs as being a direct result of the lack of mobilization plans and organization.<sup>32</sup> The actions taken during the rearmament period to plan for further buildups had the effect of greatly enhancing the massive construction program following Pearl Harbor.

The sobering message derived from the prior mobilizations is that comprehensive prior planning is absolutely necessary. For future mobilizations, time will be extremely constrained and delays due to inadequate planning will be magnified many times over, and could prove to be disastrous. It is encouraging that serious planning and preparations are finally underway -- some 40 years after the lesson should have been learned. Even after plans are complete, funding requirements for their maintenance will have to be included in all future budgets. The significant realization is that planning for mobilization cannot be done once and forgotten, it requires continuing attention, efforts and funding.

#### Contracting Highlights

The methods of contracting for design and construction during past mobilizations included fixed-price (lump sum) and fixed-fee (Cost-plus-a-fixed-fee) contracts. During and since the two mobilizations, debates have raged over the suitability of one method of contracting over the other. The fact of the matter seems to be that the specific method of contracting was the focus of attention in attempts to explain difficulties which had their origins in other factors, such as poor or non-existent planning and ineffective management.

The primary type of contract used during World War I was a cost-reimbursement type contract with a sliding scale and a maximum fixed fee of \$250,000 per cantonment contractor. The risk under such a contract was removed completely from the contractor and assumed by the Government. The fee earned was based on a percentage of cost up

to the maximum of \$ 250,000. There was severe criticism of this approach because it encouraged an unscrupulous contractor to run up costs in order to earn the maximum fee. In February 1918, the approach was changed to basing the fee on a percentage of the government's estimated cost rather than actual costs, which was very similar to the cost-plus-a-fixed-fee (CPFF) type of contract used later during World War II.<sup>33</sup>

Concurrent with adoption of cost-reimbursement contracting was an abandonment of competitive bidding. Contractors were selected based on their past performance and demonstrated capabilities to handle the emergency construction. Both the absence of competition and the fixed-fee type contracts drew considerable fire from all circles.<sup>34</sup> Some criticism was probably justified; however, the absence of definitive plans, designs and specifications made competitive bidding totally impractical. Also time constraints precluded use of the advertising process.

During the early months of mobilization leading up to World War II, organizing and contracting for design and construction followed the pattern used during World War I. During the summer of 1940 cost-reimbursement contracting was used for air corps and industrial facilities, but had not yet been used to construct Army camps.<sup>35</sup> Even though in Jul 1940 a bill was passed and signed authorizing the use of cost-plus-a-fixed-fee contracting, it was a procedure which had little or no favor within the War Department. The desire was to use competitive firm-price or fixed-price contracts without resorting to innovations, e.g. negotiations (without competition) and

cost-reimbursement contracting.<sup>36</sup>

The absence of definitive plans and designs caused shortcomings in developing fixed-price contracts; also, contractors faced excessive risks stemming from the non-availability of materials, labor and transportation. An example was the cantonment constructed at Fort Dix under a fixed-price contract for \$5,535,000. Because of difficulties encountered, the contractor submitted 22 claims for additional money -- four of the claims amounted to over one million dollars.<sup>37</sup>

Such experiences tended to refute arguments that cost-reimbursement was more costly than fixed-price contracting. The Quartermaster Corps used cost-plus-a-fixed-fee (CPFF) contracting extensively during the rearmament period and the peacetime mobilization leading up to December 1941 when military construction was turned over to the Corps of Engineers. Following the transfer of military construction, Lieutenant General Eugene Reybold, Chief of Engineers took a stand against previous contracting practices.

"Shortly after Pearl Harbor he announced that the era of fixed-fee contracts was over. He intended to use the Corps' 'old standby', the fixed-price contract, in all but the most exceptional cases."<sup>38</sup>

The professed a preference for the fixed-price contract for reasons of perceived cost effectiveness, timeliness (no one else ever saw timeliness as an advantage of fixed-price contracting), political acceptability, and additional manpower required for detailed supervision of the cost-reimbursement contracts.<sup>39</sup>

In spite of the pronounced preference for fixed-price contracts, the Corps of Engineers made considerable use of the CPFF contracts

during the early months of the war. The lack of time and information for planning; overextended contractors avoiding heavy capital investments; and pressure from the using services to speed up the work were all factors that necessitated the Corps' use of CPFF contracts.<sup>40</sup> In some cases part of the work on a project was accomplished by CPFF contracts and the balance by fixed-price. Often, time constraints did not allow enough time to prepare plans, specifications and advertise for fixed-price work. Prospective contractors would either back away from the invitations or they would load their bids with contingency costs to avoid losses. By contracting for site work, drainage, roads, utilities, etc. under CPFF contracts, the remaining above ground work could be contracted for competitively and economically under fixed-price arrangements.<sup>41</sup>

As CPFF contracts were curtailed in the later years of construction, more and more criticism of cost-reimbursement contracting came from the congressional quarter. The fact that work could go on without cost-reimbursement contracting seemed to be proof to some that it was unnecessary in the first place. The criticism seldom considered the changing situation as mobilization progressed:

"The Corps of Engineers did a much larger portion of emergency construction by fixed-price contracts than had the Quartermaster Corps - 50 percent as opposed to 20." At the time of transfer of military construction to the Corps of Engineers, the Quartermaster General was able to provide "layouts for sixteen camps designed to house 629,000 men. The Engineers succeeded in letting all but one of these projects on a fixed-price basis."<sup>42</sup>

Fixed-price contracts were not, however, the panacea that many advocates wished to believe.

"Even when plans were available and bids were incremental,

standard fixed-price contracts were too slow, inflexible, and risky for a period of emergency. With the declaration of war, prospects for ordinary fixed-price bids had turned from bad to worse. ... estimated that contingency items accounted for 25-33 percent of bids in the first quarter of 1942. More than ever, contractors feared unexpected delays that might make them liable for damages and unanticipated costs that would put them in the red."<sup>43</sup>

The War Powers Act of December 18, 1941 allowed the President maximum latitude in contracting. He subsequently delegated his authority under the Act to the Secretary of War. Contractors were induced to bid on contracts by being guaranteed that if they did not make a profit they would at least break even. Many other restrictions which had generated contingency items in bids were also removed, e.g. suspension of penalties for delayed performance and liquidated damages. The Engineers were actually authorized to subsidize fixed-price contractors. In the final analysis:

"An important result of the War Powers Act was a lump sum contract that approached the fixed-fee in flexibility and absence of risk but did not come under the law that held fixed-fee profits to 6 percent."<sup>44</sup>

The bastardized fixed-price contract was more expensive than its prototype, but carrying the label of fixed-price made it acceptable to critics of the cost-plus-a-fixed-fee contract. The arguments over the merits of fixed-price versus cost-reimbursement contracts was never resolved. Each side had convincing arguments to support specific points; yet, when taken in the overall context one would have to conclude that each form of contracting was useful and had advantages given a specific set of circumstances.

#### Negotiation versus Advertisement

A problem that plagued the Army throughout the mobilization and

war periods was the matter of negotiated contracts versus those advertised publicly.

"When haste precluded public advertisement, the Corps would solicit bids from a number of prequalified firms and negotiate with the low bidder."<sup>45</sup>

For reasons that are not readily apparent, negotiations were made mandatory upon all War Department agencies. It is obvious that public advertisement is time consuming and places inordinate delays on procurement actions when time is of the essence; however, the negotiation edict only makes sense if it was for reasons of security.

The Corps of Engineers reluctantly complied and suspended use of formal advertisement. However, the use of "competitive negotiations" continued. Of course this allowed the Corps to be selective as to which firms were given an opportunity to vie for construction work. Bids were solicited only from those firms who had been carefully checked beforehand to determine if they could handle the proposed work. Because of the selectivity, it was decided that bid bonds and performance bonds were no longer necessary, and they were waived resulting in considerable savings of both time and money.

Smaller companies that could not previously compete for work because of bonding requirements were able to gain some of the construction action. The whole issue of mandatory negotiations and the associated bonding waivers generated fierce opposition from the public sector. The Corps tried to return to formal advertising rather than alienate industry, but was again directed to comply with mandatory negotiations. It was not until July 1945 that the Corps returned to competitive bidding.<sup>46</sup>

## CHAPTER III

### CONTRACTING READINESS

Contracting readiness is the state of preparedness to award contracts immediately upon alert for mobilization or receipt of other authorization in conjunction with a mobilization. Our actual and perceived capabilities to rapidly mobilize the existing force structure and, if necessary, expand beyond it are what make mobilization a credible concept. In this vein the lack of support facilities could seriously impede the mobilization of our forces and their ultimate success on the battlefield. Contracting for design and construction is critical to the mobilization process and must take place before any facilities can be constructed. The challenge is to use time wisely by not wasting it to award contracts, but allowing the maximum amount of time possible for contractors to construct facilities -- under the best of circumstances they will be pressed for time.

The concept of contracting readiness should be considered from the same perspective as other readiness factors, i.e. personnel, training and materiel. Facilities must be available early in the mobilization process in order to preclude detrimental delays. Planning and preparations during peacetime are essential to ensure that contracting for design and construction can occur rapidly. This chapter deals with those factors that affect the speed and efficiency with which contracting can be accomplished.



## GENERAL REQUIREMENTS

In terms of readiness, the most significant thing about mobilization requirements is that they be identified and planned for during peacetime. Otherwise, mobilization design and construction activities will be reactive instead of active. No amount of stop-gap measures, innovations and initiative can ever overcome the lack of preparations due to unidentified and undefined requirements. The Corps of Engineers Mobilization and Operations Planning System (CEMOPS) establishes the requirement and provides the framework for mobilization planning. However, CEMOPS does very little to provide guidance for developing a contracting strategy for rapid design and construction during mobilization. Notwithstanding, CEMOPS does set forth planning requirements which will enhance the contracting process. These requirements include Installation Support Books (ISBs) and Mobilization Master Plans (MMPs). Also, actions are underway to develop standard facility designs, mobilization drawings (M-drawings) for use during mobilization.<sup>47</sup>

### Installation Support Book

An Installation Support Book (ISB) is intended to provide all of the essential information needed for design and construction of mobilization facilities at a specific installation.<sup>48</sup> Of course the requirement to prepare an ISB implies that a specific site has already been selected as a mobilization site. Accomplishment of site selection is an improvement over previous mobilizations. During the mobilization for World War I, contracting was held up while sites were

selected for National Guard camps and National Army cantonments.<sup>49</sup> The situation for World War II was a little better in that the eighteen months of rearmament activities prior to commencement of mobilization allowed more time for site selection and construction. Even with the long lead time, the Army was not prepared to immediately commence construction at all locations.<sup>50</sup>

If ISBs are actually available at the time of mobilization, many of the problems faced during previous mobilizations will have been overcome. ISBs are to contain information about administration, organization and functions, installation environment, and project information. Of greatest importance, in terms of contracting readiness, is the inclusion of information about "Local contractors and their capabilities" and all pertinent project information:

"...all existing mobilization construction requirements at the installation, including appropriate portions of master planning documents. A current listing will be maintained showing the projects, priority sequence of design and construction, and the status of design effort. An information file will be maintained on each project containing:

- (1) Location of required facility.
- (2) Location of existing utilities.
- (3) Standard or specific plans and specifications.
- (4) Specifications to be used in design and construction of the project.
- (5) Correspondence relating to the project."<sup>51</sup>

The detailed information to be contained in ISBs should be ideal for use in preparing the plans and specifications of contracts for design and/or construction. It is apparent that planning considerations are further advanced now than during previous

mobilizations, which is encouraging. However, it is expected that relatively there will be much less time to respond to construction requirements than in the past.

#### Mobilization Master Plan

As with ISBs, Mobilization Master Plans (MMPs) are a significant advancement over the planning which had taken place prior to World War I and World War II. The MMP serves the same purpose as an installation master plan, except that it is oriented specifically to mobilization.

"The mobilization master plan portrays the existing physical composition of each mobilization installation, and a plan for orderly comprehensive development to support its initial full mobilization mission with adaptability to total mobilization."<sup>52</sup>

It is imperative that the MMPs be maintained in a configuration reflecting current organizational concepts. This maintenance is provided for in CEMOPS, which requires regular revision and update.<sup>53</sup> As tables of organization change, camp layouts may prove to be inadequate. During World War II, one of the main delays in getting construction underway was waiting for a definite table of organization. Camps laid out to accommodate 125-man companies with two barracks, a recreational building, a mess hall, and a supply and administration building had to be redone to accommodate 217 men in four barracks.<sup>54</sup> Up to date MMPs in conjunction with ISBs will be invaluable to efforts to contract for design and construction during mobilization.

## Designs

The matter of designs in support of mobilization is one which has the potential for significantly reducing the time required for contracting and construction during mobilization. As will be discussed elsewhere, the availability of designs will significantly influence the type of contracting which may be used during mobilization. With completed designs it is obvious that contracting for construction may get under way quickly and efficiently.

Efforts are currently underway to develop designs for standard facilities to support mobilization. During early Fiscal Year 1983, a mobilization construction simulation was carried out utilizing standard "M drawings" and specifications for 288-man barracks.<sup>55</sup>

While such standard designs are essential, the overall objective is to incorporate these designs into ISBs and MMPs. Only with comprehensive planning and designs during peacetime will obstacles to rapid contracting be minimized. Designs during peacetime must also include site adaptations in consonance with installation plans.

The logical design objective in terms of mobilization planning should be to complete and package by contract all design requirements during peacetime. Accordingly, the remaining contracting requirement for mobilization would be to contract only for construction.

## CONTRACT PACKAGING

To in fact be ready to contract for design and construction during mobilization, decisions need to be made in advance concerning contract

packaging. In determining the most appropriate configuration of contract packages, consideration needs to be given to such things as complexity of the work, dollar value, availability of designs and specifications, and the availability of contractors in a specific area. The inherent risks of a project may be reduced by separating out some of the higher risk work, e.g. site work and utilities, into one contract and placing lower risk work in other packages. However, this approach has a high potential for contractors interfering with each other when trying to work in the same area.

Experience supports that a single contract is normally faster and easier to administer than separate ones. The reality, however, may be that some contractors cannot take on large contracts requiring extensive capital and experience. In 1942, the Corps of Engineers found that most large firms had become overloaded with mobilization construction work and competition began to suffer resulting in greatly inflated contract bids.<sup>56</sup>

A logical contract packaging approach is one which allows incremental bidding or negotiation. Such an approach would involve structuring a potential contract package so that a project may be undertaken as either one or a series of separate projects. Congestion on an installation is nearly assured during mobilization and it may be exacerbated by several contractors working simultaneously. Thus, efforts should be made to package projects on an area basis (all work in a specified area within a single contract) as opposed to a basis of specialty work.<sup>57</sup>

## ESTIMATING AND SCHEDULING

Contracting readiness implies that projects are sufficiently developed so that comprehensive Government estimates may be prepared in advance. It is important that estimates be available in advance of mobilization so the reasonableness of bids and proposals may be determined. In the case of negotiations, a firm Government estimate helps to guide the Government negotiator in arriving at reasonable costs. Inaccurate estimates were cited as contributing to excessive construction costs and profits during past mobilizations.<sup>58</sup>

Preliminary construction schedules should be developed so management efforts can focus on potential critical points. Also, schedules will be helpful in determining the most advantageous contract packaging. Cost estimates and schedules are simply a means of enhancing the efficiency and effectiveness of contracting for design and construction during mobilization.

## ON THE SHELF CONTRACTS

A primary objective of contracting readiness should be to have "On The Shelf Contracts" ready for contracting in the event of mobilization. Such contracts should reflect requirements, plans and packaging, supported by estimates and preliminary schedules. Contract documents should be complete with all general and special provisions, scope of work, plans and specifications. Likewise, the contract package should include requests for bids and/or proposals. The concept is to have contract packages on the shelf which could be used

for award with little or no additional preparations.

To have a usable contract on the shelf it is necessary that considerations and preliminary determinations be made concerning the type of contract which would be appropriate in specific cases, e.g. firm-fixed-price or cost-plus-a-fixed-fee. The advantage of being able to quickly award a contract are apparent; moreover, carefully prepared on the shelf contracts should be a manifestation of detailed preliminary planning. Thorough planning and comprehensive contract documents will have a positive affect on the efficiency and effectiveness of contractor performance -- delays due to incomplete or inconsistent plans will be virtually eliminated and costs will be lower. Administration by the Corps of Engineers will also be made easier by thorough preparations.

#### CONTRACTOR SELECTION

The Corps of Engineers Mobilization and Operations Planning System (CEMOPS) cites the necessity for identifying local contractors and their capabilities.<sup>53</sup> In the event negotiated procurements are necessary, the importance of knowing the availability and capabilities of contractors will be of paramount importance. Here again, it is essential that such information be developed during peacetime so it will be immediately available.

A potential innovation in regards to contractor selection might be to obtain contractor commitments in advance of mobilization. The specific process by which this may be accomplished is open to

development. One possibility is to competitively obtain contractors for contingency contracts and to utilize a retainer system to ensure that they are available on a moments notice. Such contracts would need to be updated on an annual or biannual basis. The advantages of having contractors on retainers are enormous in terms of rapid construction. A contractor would be obligated to have up to date plans and schedules as well as ensuring that he could support the efforts with manpower, equipment and materials. Accordingly, he would have an in-depth understanding of a project far in advance of commencing work.

Having contractors on retainers would require some level of funding to cover their costs for planning and maintenance of capabilities. For the most part, costs should be for management participation in mobilization planning. Any costs would have to be viewed as an investment in contracting readiness.

#### POSSIBLE PRE-BUILDS

It would be unrealistic to suggest that all facilities required for mobilization should be constructed during peacetime. Such an approach would be unpopular with political officials and would use funds which might be more prudently spent elsewhere. There are, however, some potentials for peacetime construction which would add assurance to being able to accomplish significant construction efforts in a short time frame. For example, it might be advantageous to accomplish site work and drainage construction which could represent inordinate risks in a compressed mobilization construction period.



Likewise, portions of utilities systems might be installed during peacetime; thereby, speeding up mobilization construction.

Peacetime construction to support mobilization is an issue which has considerable merit but little chance of attracting expenditure of significant funds. In some cases limited work might be accomplished by engineer troop units, either active or reserve components. Any decision to pursue mobilization work during peacetime would require sound justification in terms of supportability by detailed planning. Obviously, peacetime mobilization construction work is an investment expected to increase the probability that needed mobilization construction can be accomplished in the time available. Clearing, grubbing, earth work, drainage, and construction of roads are candidates for premobilization completion, because they would contribute to allowing vertical construction work to begin immediately upon mobilization.

#### STATUTORY AND REGULATORY CONSTRAINTS

Efforts have been made by the Corps of Engineers to determine constraints on contracting which would require relief during mobilization. The Defense Acquisition Regulation (DAR) currently contains numerous exceptions to requirements, which can be used when a national emergency exists. It is also reasonable to assume that relief of some requirements would be forthcoming from the Congress when an emergency requiring mobilization occurs. During the mobilization for World War II, obstacles to contracting were greatly nullified by;

"...the War Powers Act of December 18, 1941, under which the President could authorize any government department to modify or amend contracts 'without regard to provisions of the law' when 'such action would facilitate prosecution of the war.' Congress placed two limitations on the President; it prohibited percentage contracts and forbade violation of the laws regulating profits."<sup>60</sup>

The 1941 War Powers Act is representative of the type of relief that tends to ensure that judgment is applied in contracting operations. The laws and regulations governing contracting are to be applied unless there is a justifiable reason to provide relief in specific instances. Any relief which would summarily remove all restrictions from the laws without imposing some baseline reference would be unlikely. The 1941 War Powers Act seems to be a precedent which could be applied by the Congress again in a future national emergency. Such relief would make it a relatively simple matter to relax regulatory constraints on an as needed basis. Carte blanche removal of all statutory and regulatory constraints would not be in the best interest of the Corps of Engineers because of the recriminations which would inevitably follow after the fact.

#### PREPARATIONS/READINESS

In the broadest sense of the terms, preparations to contract equals contracting readiness. Preparations must include defining the requirements, developing plans (ISBs and MMPs), designing, contract packaging, and developing estimates and schedules. Having prepared for contracting, complete contract packages would be placed on the shelf, ready for rapidly entering into contracts for mobilization construction. Organizational readiness for contracting is not

specifically addressed in the foregoing discussion, but it is certainly important to overall contracting readiness. The matter of organization becomes especially important for administration if cost reimbursement contracting is used.

The form of contracting is greatly influenced by the readiness to contract. During World War I and early in World War II it was necessary for the Quartermaster Corps to rely almost exclusively on cost-reimbursement contracting. The reason for this reliance was primarily due to the lack of readiness to commence and carry out the massive design and construction programs. Prior to Pearl Harbor the Quartermaster Corps had carried out advance planning to the extent that the Corps of Engineers was able to take over and make use of fixed-price contracting, even during extensive and time constrained wartime mobilization.

## CHAPTER IV

### CONTRACTING CONSIDERATIONS

Time, cost and quality are primary goals in any design or construction contract. Which goal is the most important is a situational matter. To say that all three goals are of equal importance is consistent with professional standards and expectations; but, in different situations the priority of importance will not be equal and may significantly change from time to time. The design and construction experiences of World War I and World War II support the idea that "time" will likely be the most important goal when contracting for mobilization construction. "Cost" may not be the most important goal when mobilization is under way, but it will surely be the main focus of "finger pointers" after-the-fact. A justifiable pride of the Corps of Engineers is the quality of facilities it produces. The reality of the situation is that "quality" probably will not be the most important goal when constructing temporary or semi-permanent mobilization facilities.

This chapter deals with optional types of contracts and associated considerations for design and construction during mobilization. The Defense Acquisition Regulation prescribes two basic types of contracts, fixed-price and cost-reimbursement, with several variations of each, constituting a wide range of contract options. In actuality, the Corps of Engineers will probably be concerned with two forms of contracts; (1) Firm-Fixed-Price (FFP), and (2) Cost-Plus-a-Fixed-Fee

(CPFF). The specific form of contract used will depend on the primacy of time, cost and quality, and the risks facing the prospective contractors. The overriding consideration will always be the mission to enhance the war fighting capabilities of the United States.

### FIRM FIXED PRICE CONTRACTS

The Defense Acquisition Regulation (DAR) specifies that, "Generally, contracts for construction shall be formally advertised and be of the firm fixed-price type."<sup>61</sup> Variations of the fixed-price contracts are authorized, but the FFP type is preferred. FFP contracting applies to both design by architect-engineers and construction. While formal advertising is preferred, FFP contracts may be negotiated, which is discussed below.

#### Characteristics

The main advantage of FFP contracting from the Government's point of view is that the contractor assumes full cost responsibility. Also a FFP contract requires the least direct management involvement by Government personnel -- the Government is mainly concerned with compliance; thus, administration manpower and costs are minimized.<sup>62</sup> A FFP contract awarded on the basis of formal advertising and competitive bidding is potentially the most cost effective form of contract. Of course, cost effectiveness can be quickly eroded by uncertainties and risks. FFP contracts are inherently inflexible and as risks increase it can be expected that contractors will place contingency costs in their bids to protect themselves. As discussed previously, excessive contingency items

became a matter of great concern during WW II mobilization construction.

A FFP contract provides a strong profit incentive for a contractor, which encourages him to hold down costs and complete the work on time. The Government's concern is to insure that the contractor does not sacrifice quality in the interest of cutting costs. The vast majority of contractors recognize that it is in their best interest to provide the agreed to quality, otherwise they may suffer rework and/or punitive costs.

Most peacetime construction work within the United States is accomplished under fixed-price type contracts. Accordingly, the Corps of Engineers is accustomed to fixed-price contracting and is organized for effective and efficient administration. So, if the situation permits, FFP would be the preferred type of contract for design and construction during mobilization.

#### Mobilization Constraints

Notwithstanding the desirability of using FFP contracting, mobilization presents some significant constraints that may limit, if not prohibit, using FFP contracts. Constraints might include insufficient time to formally advertise, inadequate plans and specifications, and shortages of workers and materials. One or a combination of constraints, depending on severity, may make it unadvisable to use a FFP contract.

Insufficient time to formally advertise does not in itself

preclude use of a FFP contract. However, sufficient time must be available to allow prospective contractors to prepare sound bids. If contractors are unsure of their bids they can be expected to pad their estimated costs so as not to place their businesses in jeopardy. Constrained time frames and compressed construction schedules represent significant risks to contractors.

Inadequate plans and specifications represent inordinate difficulties for FFP contracting. First of all, the absence of detailed plans and specifications manifests uncertainty on the part of the Government. Contractors will not be able to prepare comprehensive bids and may either decline to participate or submit exorbitant bids filled with contingencies to cover uncertainties. Whenever, a FFP contract is used where plans and specifications or other project information has been poorly developed, it can reasonably be expected that a contractor will seek compensation in claims. A central source of problems in past mobilizations stemmed from the lack of adequate plans and specifications. A similar situation can be expected in future mobilizations if contracting readiness is not achieved.

As construction and other mobilization activities pick up momentum, there will be an increasing potential for experiencing shortages in the availability of workers and/or materials. Again, such shortages represent unacceptable risks for FFP contractors. The Government can either guarantee relief or expect contractors to provide financial offsets in contingency items.

In addition to the above mentioned constraints, other factors may

enter to detract from the viability of FFP contracting. If the total estimated dollar value of a contract is too large, some potential contractors may not have sufficient capital or be able to obtain adequate bonding to support the venture. Hence, true competitiveness may be reduced, resulting in excessive bids without any real recourse.

#### COST-PLUS-A-FIXED-FEE CONTRACTS

Cost-plus-a-fixed-fee (CPFF) contracts should be employed when uncertainties become significant.<sup>63</sup> Variations of cost-reimbursement contracts other than CPFF are possible but they involve more intense management by the Government and would be difficult to adequately control during mobilization. Thus, CPFF is the most probable form of cost reimbursement contract to be used during mobilization. Award of a CPFF contract will normally be based on negotiations with prequalified contractors.

#### Characterisitics

Flexibility and speed are the primary advantages of CPFF contracting. Another advantage of CPFF contracts is that plans, designs and specifications do not need to be completed prior to award and commencement of work.<sup>64</sup> The contracting officer is able to direct the contractor as to specific work, incurrence of costs and establishment of priorities -- normally, such directions will not affect the previously negotiated fixed-fee. The fee is fixed, meaning that it is based on the estimated cost of the work to be performed, and is not subject to variance due to quantity or quality of the contractor's performance. It can be changed, however, by negotiation resulting from significant increases or decreases from the expected



scope of work.

There is no profit driven incentive for a contractor to control costs except that he may cause his profit to be reduced by incurring costs which are not allowable for reimbursement by the government. Disallowable costs are normally those outside of the scope of work of the contract or specifically disallowed within the contract language. An astute contractor will not unknowingly incur disallowable costs. A CPFF contract should be used only when risks make the use of a fixed-price contract undesirable.

#### Mobilization Constraints

The biggest drawback to cost-reimbursement contracting is the perception by many that it is an excessively costly way to do business. During and after past mobilizations there were numerous allegations of waste, fraud, and general evilness levied against cost-reimbursement contracts and those who used them. It is certainly true that the potential exists for excessive costs when using CPFF contracts; on the other hand, they can be real cost savers when risks are high. Unfortunately, their cost effectiveness is seldom recognized. In the press of rushing to complete facilities during mobilization it is entirely possible that costs will not be watched as carefully as would be the case in less intensive situations.

The use of cost-reimbursement contract will require additional management efforts by Corps organizations. A significant requirement will be the auditing of costs incurred by the contractor. Both the organization and staffing of Corps organizations may need to be

increased on a relatively short notice.

It may be possible that premature reliance on cost-reimbursement contracting will be used as a crutch to compensate for inadequate mobilization planning. The only realistic way to contract when plans have not been developed is to use a cost type contract. However, the most efficient way to contract regardless of what type of contract is used is to have completed plans. It would be a mistake for anyone to think that planning shortcomings can be adequately overcome by using cost-reimbursement contracting.

#### VARIATIONS

As indicated above, the Defense Acquisition Regulation (DAR) prescribes a number of variations of both fixed-price and cost-reimbursement type contracts. There may be instances in design and construction for mobilization where these variations may be applicable, but as a general rule FFP and CPFF are the types which will be used. It is possible that during mobilization there will be relief of certain requirements, which will in effect vary the nature of these two types of contracts. An example of the possible variations is the hybrid FFP contract used during World War II, which was developed as a result of the relaxing of constraints under the War Powers Act of December 1941.

A "Letter Contract" presents a possible way to overcome shortfalls in readiness to contract for design and construction during mobilization. DAR defines the letter contract as, "...a written

preliminary contractual instrument which authorizes immediate commencement of ... performance of services ... ." The circumstances which must be present in order to justify using a letter contract would likely be present during mobilization.

"A letter contract may be entered into when (i) the interests of national defense demand that the contractor be given a binding commitment so that work can commence immediately, and (ii) negotiation of a definitive contract in sufficient time to meet the procurement need is not possible ... ."65

Before resorting to using a letter contract one should realize that it is best described as a measure to buy time. It demands that a contract be definitized into a fixed-price or cost-reimbursement contract within a prescribed time frame -- the necessity for this should be obvious since there are few controls open to the Government during performance of a letter contract. While a letter contract offers an opportunity to accommodate urgent requirements, it should only be used in extreme cases.

#### ADVERTISING/COMPETITION

Whether it is practical to achieve competition in mobilization design and construction is a matter of being prepared to contract. Even then, time may preclude the process of formally advertising. The objective should be to formally advertise for design and construction, while recognizing that it may not be possible if it becomes necessary to reduce the time frame to award contracts.

The Defense Acquisition Regulation states that: "Procurement shall be made by formal advertising pursuant to 10 U.S.C. 2304(a) whenever such method is feasible and practicable under existing conditions and

circumstances."<sup>66</sup> The requirement applies to construction and architect-engineer contracts in the same manner as other procurements. Of course, formal advertisement implies the achievement of competition and use of firm-fixed-price contracts.<sup>67</sup> The requirement is flexible, depending on the situation.

### NEGOTIATIONS

There will be situations during mobilization when it will not be possible to follow all of the steps of formal advertising. In those cases, which could be many, it will be necessary to resort to competitive negotiations. As was cited previously, the Corps of Engineers used competitive negotiations extensively during World War II. Moreover, the Defense Acquisition Regulation states that:

"Except where an award is made on initial proposals without negotiations ..., negotiations will be conducted with all offerors within a competitive price range of the Government estimate."<sup>68</sup>

As is often the case in time constrained situations, it may be necessary to select a few contractors who are qualified to perform the work and invite them to propose on the work. It would be with these contractors that competitive negotiations would take place.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

Rapid design and construction during mobilization is a concept as opposed to a specific method or procedure. The comparison of current mobilization planning to the lessons offered from prior mobilizations reveals that at the current time the situation is somewhat better than before and is progressing. This chapter provides a brief summarization of conclusions drawn from the preceding discussion and concludes the study with recommendations relevant to contracting readiness.

#### CONCLUSIONS

##### Critical Activity

Contracting is a "critical activity" in the sequence of activities necessary to carry out design and construction during mobilization. It must receive special attention during peacetime planning and preparations for mobilization. (Contracting includes all acquisition activities necessary to develop, award and administer a contract. Central to the issue of this study are all actions up to the point of award.)

##### Contracting Readiness

Contracting Readiness is not being specifically pursued. There are many things happening in the mobilization planning arena which

certainly support and even control contracting readiness. However, the planning and preparations are not being carried to their logical preparedness conclusion, i.e. being ready to award a contract at a moments notice.

Design requirements should not be of major concern once current planning requirements have been satisfied. Current efforts should result in completed designs, site layouts and site adaptation of facilities. In the event of TOTAL mobilization, it is probable that additional design efforts would be required during mobilization.

On the shelf contracts are not required by the Corps of Engineers Mobilization and Operations Planning System (CEMOPS). Similarly, there is no indication that Installation Support Books (ISBs) are required to be configured as contract packages, which would be a major step in the direction of contract readiness. On the shelf contracts are envisioned as being complete packages ready for final negotiation and award, which includes soundly developed cost estimates and preliminary schedules. The implication with this concept is that continued efforts and funding will be necessary to update and maintain contract packages.

There is no mention in any planning guidance concerning premobilization involvement of potential construction contractors. Assuming authorization and funding could be obtained, construction contractors might be committed on a retainer basis, which could be renewed periodically. This readiness aspect needs further study and development.

### Contracting Methods

No single method of contracting would be appropriate for all design and construction during mobilization. It seems likely that contracts will be either firm-fixed price or cost-plus-a-fixed-fee, based on particular situations and circumstances. In some cases contracts may be formally advertised and awarded and in other cases they may be awarded by negotiation. The specific form of contract to be used is not as important as the degree of thoroughness with which a contract is prepared.

Efforts have been made to identify contracting constraints for which relief should be sought in advance of mobilization. The War Powers Act of December 1941 provides a precedent for rapidly obtaining necessary relief of statutory constraints. It is not apparent that current laws, with provisions for exception, are overly restrictive. At any rate, this does not seem to be a significant impediment to contracting in support a FULL mobilization.

### Corps of Engineers Role

The Corps of Engineers could enhance their role in the design and construction mission by pursuing contracting readiness. The current direction and progress of the Corps in preparing for mobilization are excellent. However, the Corps' total preparations can only be as good as the requirements identified by potential customers.

The divisions and districts need to look at potential organization and staffing requirements to support heavy use of cost-reimbursement

contracts. The added administrative requirements may necessitate some unique organization and staffing changes at the time of mobilization.

## RECOMMENDATIONS

### Contracting Readiness Concept

Recommend that the concept of contract readiness be incorporated into mobilization and operations planning systems.

### Contracting Readiness Guidelines

Recommend the establishment of contract readiness guidelines to provide for the following:

- o On the shelf contracts ready for immediate award.
- o Expanded staffing for cost-reimbursement contracts.

### Peacetime Involvement of Contractors

Recommend that a study be conducted to determine the feasibility of involving potential contractors in mobilization planning and preparations.



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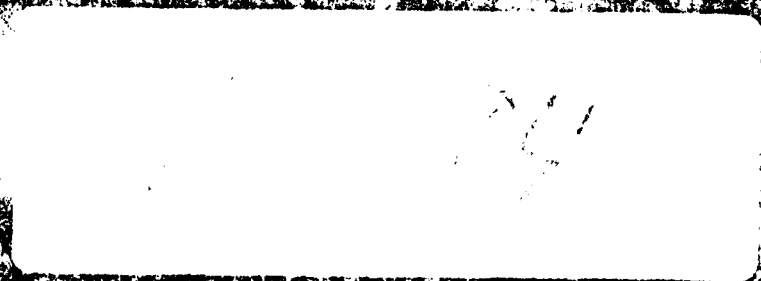
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